JAMES M. IRVING, PH.D.

8222 Spadderdock Way, Laurel, MD, 20724 | (518) 322-6750 | james.irving.phd@gmail.com |
LINKEDIN: james-irving-phd | GITHUB: https://github.com/jirvingphd

SUMMARY

Innovative and enterprising data scientist. Experienced in applying advanced data science techniques to real-world problems, including statistical modeling, machine learning, and data visualization. Skilled at extracting valuable insights from complex datasets and supporting data-driven decision-making. Adept Python programmer with the demonstrated ability to rapidly master and apply new technologies. A highly analytical professional committed to continuous learning and leveraging the value of data to innovate and transform. Former neuroscience researcher with a solid foundation in science, experimental design, and cognitive neuroscience.

COMPETENCIES

- Data Analysis
- Statistical Modeling
- Machine Learning
- Data Visualization
- Experimental Design
- Quantitative Research Methods
- Time Series Analysis
- Signal Processing
- Cognitive Neuroscience
- Behavioral Analysis
- Database Management
- Pattern Recognition
- Python Programming
- Deep Learning
- Natural Language Processing
- AI/LLM Model Implementation
- Adaptive Communication Style
- Problem Solving & Critical Thinking

EXPERIENCE

Coding Dojo | Remote

Curriculum Writer - Data Science | Mar 2023 - Jan 2024

- Authored and delivered three advanced data science courses covering Time Series Modeling, NLP, and Model Deployment to facilitate skill acquisition for over 100 learners.
- Enhanced and extended the curriculum of a 16-week boot camp to a 24-week program, resulting in a 50% increase in instructional depth and engagement.
- Developed and implemented Monday.com boards, including public forms and executive-facing Gantt charts, to automate internal workflows and streamline curriculum management, resolving over 100 issues.
- Integrated APIs, Web scraping, and Computer Vision (CNNs) into course content, fostering practical skill development and aligning with industry demands in data science and machine learning.

Data Science Instructor | November 2021 - March 2023

- Achieved outstanding Net Promoter Scores (NPS) exceeding 90% through the delivery of engaging live lectures, demonstrating effective communication and pedagogical skills.
- Implemented automated tools for administrative tasks, reducing student onboarding time from 5 hours to a mere 2 minutes, optimizing operational efficiency.
- Authored and delivered a highly acclaimed 4-week course with a perfect NPS rating, showcasing expertise in curriculum development and instructional delivery.
- Designed and presented over 16 interactive live lectures and code-along projects, significantly enhancing student participation and fostering a dynamic learning environment.

Flatiron School | Remote

Data Science Instructor | Oct 2019 - Oct 2021

- Mentored and supervised 60+ students to successfully transition into data science, achieving a high post-program employment rate.
- Led and conducted 90-minute study groups weekly, accumulating over 270 hours of recorded lessons, enhancing student comprehension and engagement.
- Spearheaded the development and implementation of the "Flex" boot camp program, refining instructional design and delivery methods to meet diverse learning needs.
- Established three student-progress-tracking Looker dashboards, providing real-time insights into student performance and facilitating timely intervention strategies.

- Implemented data-driven approaches to enhance program efficacy, resulting in improved student outcomes and program satisfaction.

University of Maryland, School of Medicine | Baltimore, MD

Laboratory Manager | Jul 2017 - Aug 2018

- Ensured full compliance with regulatory standards as the lab's public representative, achieving a flawless record with all 4 inspections passing without demerits.
- Negotiated and finalized a technical hardware contract worth approximately $100,000 with vendors, optimizing procurement processes and ensuring cost-effectiveness.
- Managed and administered over 20 TBs of both cloud and local data storage systems, ensuring data accessibility, security, and efficient retrieval.
- Successfully overhauled mouse colony management procedures, resulting in a remarkable 60% reduction in housing costs, from approximately $3.8k/month to $1.5k/month, through strategic resource allocation and process optimization.

Postdoctoral Research Fellow | June 2015 - July 2017

- Spearheaded neuroscience research endeavors, employing cutting-edge techniques such as in vivo optogenetics and electrophysiology recordings, resulting in groundbreaking insights into neural functioning in awake and behaving mice.
- Developed approximately 30 custom analysis scripts in languages including Matlab, NexScript, MedPC, and Arduino, enhancing data processing capabilities and facilitating comprehensive statistical analyses of large datasets.
- Mentored and guided a diverse team comprising 1 postdoc, 2 Ph.D. students, 3 lab techs, and 3 undergraduate volunteers, fostering an environment of collaborative learning and achieving research excellence.
- Demonstrated self-directed learning by mastering Matlab programming and independently creating custom-designed analysis programs for large datasets in multiple programming languages, streamlining data interpretation processes and enhancing research efficiency.

DATA SCIENCE PROJECTS

NLP Analysis of Amazon Reviews + AI Recommendations - GitHub Link

Natural Language Processing Analysis, Modeling, and Deployment with Actionable Insights

- Designed and deployed a user-centric Streamlit dashboard, integrating live sentiment predictions and interactive analysis of trends to guide strategic decision-making.
- Conducted sentiment analysis on over 5 million Amazon Grocery & Gourmet Food reviews, utilizing NLP and machine learning techniques (Logistic Regression, Tf-idf vectorization) to identify key factors affecting customer satisfaction and achieve 95% accuracy in sentiment classification.
- Employed Hugging Face transformers and Lang Chain/ChatGPT within the dashboard with a vectorized database used for summarization and insights, translating vast consumer feedback into actionable product enhancement strategies.

How to Make a Successful Movie – GitHub Link

Constructing and analyzing an extensive movie database with machine-learning-based insights + Tableau Dashboard

- Engineered a comprehensive MySQL database integrating IMDB and data from TMDB API for data-driven insights.
- Designed an interactive Tableau dashboard to communicate findings to stakeholders, enhancing decision-making processes (see GitHub link).
- Applied A/B Testing to make informed recommendations on what movies are successful at the box office.

How to Spot a Troll – GitHub Link

Classifying Russian Troll Tweets vs Authentic Tweets

- Conducted EDA on 3M tweets, identifying patterns indicative of non-authentic activity by Russian Troll Farms.
- Produced alternative final models - one optimized for speed, one for accuracy.

Recidivism Risk Assessment – GitHub Link

Classifying which released prisoners in Iowa will return to a life of crime using Next-Gen Gradient Boosted Trees

- Built a classification model to predict recidivism risk among released prisoners with over 70% accuracy (via scikit-learn and Catboost).
- Researched Iowa's state sentencing guidelines and sentencing enhancements to engineer new numerical features to capture the severity of the crimes committed and the duration of sentences.

EDUCATION

Data Science (Full-Time) February 2019 - August 2019
Flatiron School

Doctor of Philosophy August 2009 - May 2015
Neuroscience
University of Maryland, Baltimore, MD

Bachelor & Master of Science August 2004 - December 2008
Neuroscience
Tulane University, New Orleans, LA

PROFESSIONAL SKILLS

Programming:
- Python & Object-Oriented Programming
- SQL (MySQL, SQLAlchemy)
- MATLAB
- PyPi Package Publishing
- HTML / CSS
- NexScript programming
- MedState Notation
- Git/GitHub

Data Analysis
- Extract, Transform, Load (ETL) (numpy, pandas),
- AB Testing (scipy, statsmodels, GraphPad Prism, SPSS)
- Machine Learning (scikit-learn, Keras, Catboost, XGBoost),
- Database Administration

Software:
- Adobe Illustrator
- Adobe Photoshop
- GraphPad Prism
- Microsoft Office (Word, Excel, PowerPoint)
- NeuroExplorer
- Plexon OfflineSorter
- VS Code
- Jupyter Notebook/Lab

Visualization/Dashboarding
- Plotly / Dash
- Tableau
- Streamlit Deployment
- Seaborn / Matplotlib
- Looker

Natural Language Processing:
- nltk
- spaCy
- Tensorflow
- Hugging Face transformers
- LangChain